FALCON INCUBATION CENTRE -INCUBATION CENTRE

Department of Mechanical Engineering

Falcon Incubation Centre (Innovation, incubation and start up) at RVR&JCCE has been established to promote entrepreneurship among students of formal and non formal courses. The Cell fosters innovation, research, and entrepreneurial activities in technology-based areas. The cell motivates and promotes scientific temper among the students and provides a platform to incubate their innovative ideas into commercially viable products.

Mission - Providing ample scope to intellectual students with multi-dimensional ideas and never thought innovations through various events. Exploring concepts from the root level applicable to various domains of society as well as industry from the students, research scholars and also faculty innovatively with creative competitive thoughts and fresh ideas.

Objectives:

1. To create a vibrant local innovation ecosystem.
2. Start-up/ entrepreneurship supporting Mechanism in HEIs.
3. Prepare institute for Atal Ranking of Institutions on Innovation Achievements Framework (ARIIA).
4. Establish Function Ecosystem for Scouting Ideas and Pre-incubation of Ideas.
5. Develop better Cognitive Ability amongst Technology Students.

Faculty in charges: 1) Dr.V.Ramakoteswara Rao
2) Dr.A.Muddu

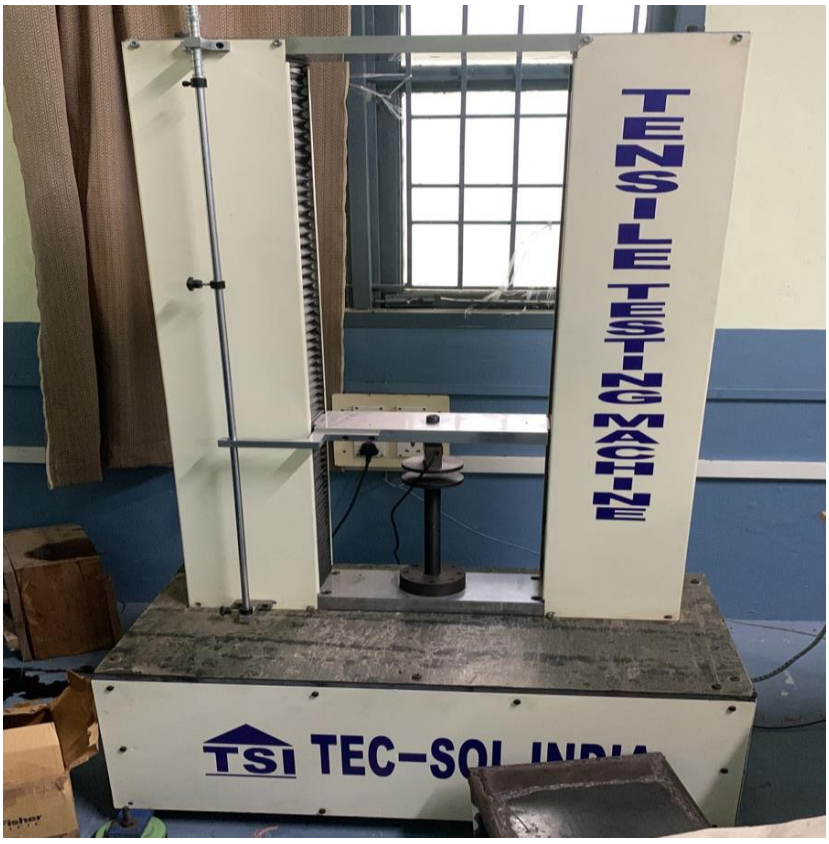
List of MoUs :

1) M/s. S.V.R.Electricals Private Limited
2) M/S Design Tribe India Limited
3) M/S Prakasa Spectro Cast(P) Ltd.
4) M/S BLOW-UPS International

Facilities:

1. 3D- printer (Flash Forge dreamer (DRM1) -

2. Tensile testing machine



3. Tubular Furnace

4. Bottom pouring stir casting furnace

5. Wear and friction monitor

6. Micro Vickers Hardness Tester(VHN)

7. Inverted Metallurgical Microscope

8. Planetary Ball Mill

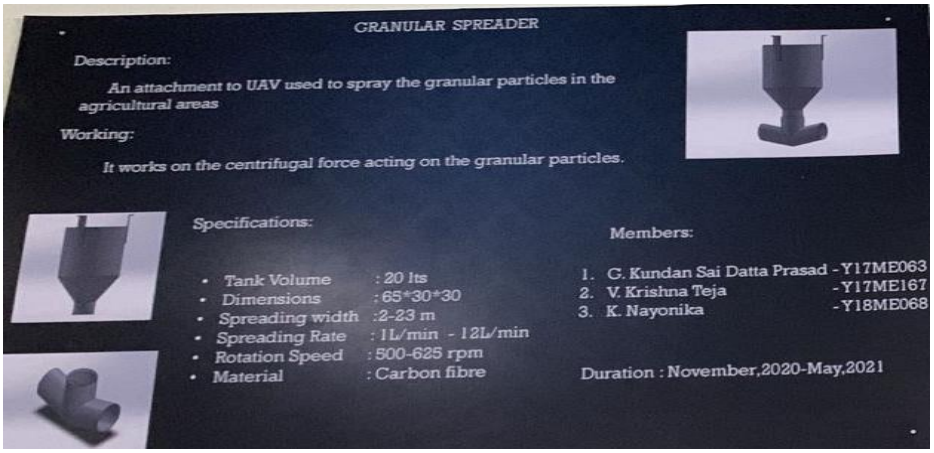
9. Agitation equipment: Evaluation and optimization of process parameters for agitation in concrete mixing

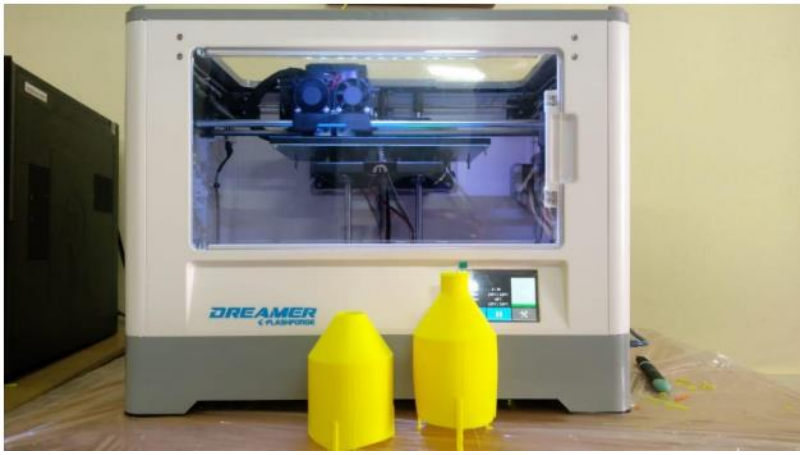
10. Vertical milling machine (Chandra+)

Innovative Ideas / Prototypes Developed

1. Effect of insulation and addition of nano-materials in compression oil on COP of R32 refreigirent 1.5 ton split air condition system. Worth of project is Rs3.59 lack.

2. An attachment to UAV used to spray the granular particles in the agricultural fields.





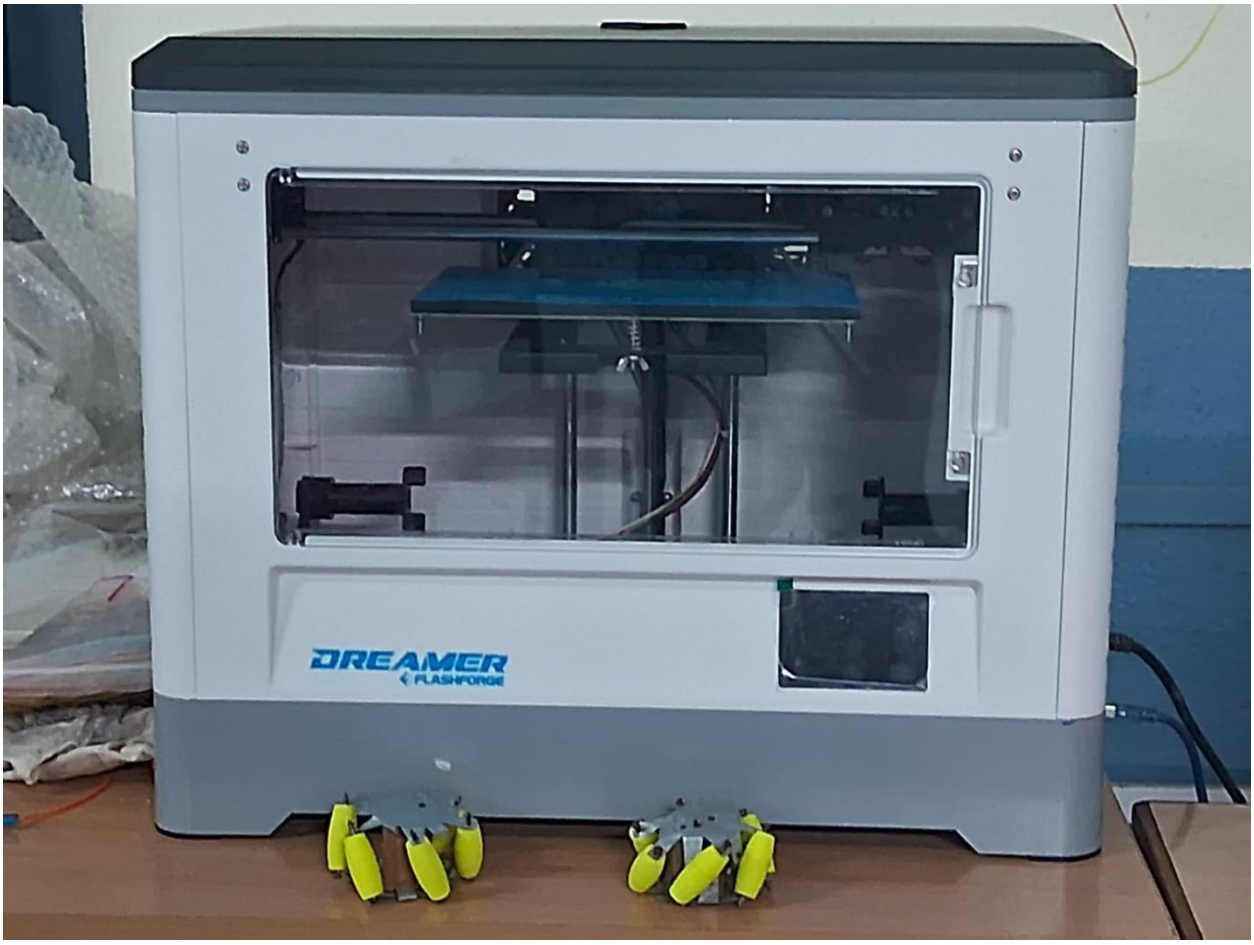
3. Renewable Energy:solar powered electric driven vehicle for physically challenged. Worth of project is Rs49,999/-

Features of the work:

- ✓ Solar charging – dock type system,
- ✓ 2 way charging with solar and power Over charge protection,
- ✓ Over load circuit protection,
- ✓ Panel connection reverse indication,
- ✓ Battery connection reverse indication,
- ✓ Real time battery voltage display system,
- ✓ Acceleration cut off while braking,
- ✓ Max load capacity: 140 kg,
- ✓ Range : 55+ kilometres and
- ✓ Charge time : less than 2 hours

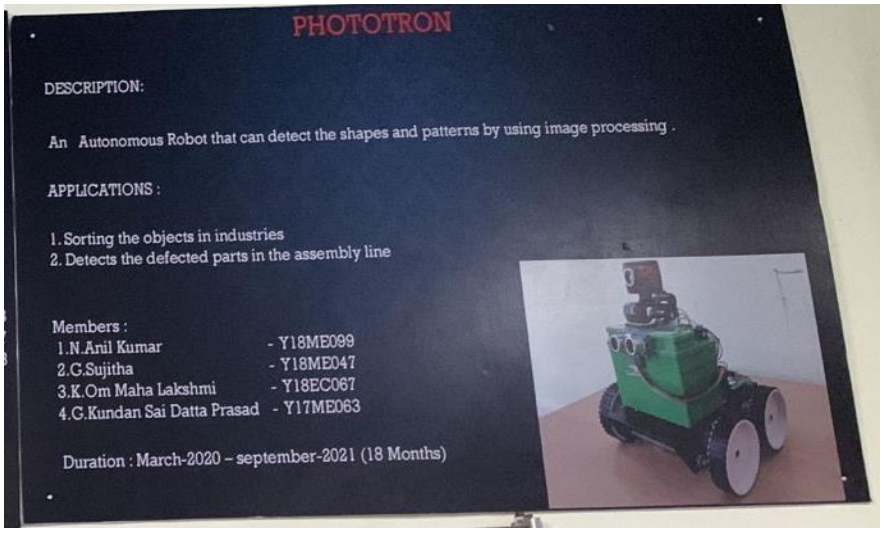
ADVANTAGES: Cuts down fuel expenses, Easy to handle, Less maintenance and Zero Carbon emissions.

4. Omni-Directional Movement:



- ✓ **Mecanum wheels** are designed to provide omni-directional movement, allowing a vehicle to move forward, backward, sideways, and rotate without changing the orientation of the wheels.
- ✓ Wheel Configuration: They consist of multiple rollers mounted at an angle around the wheel's circumference. These rollers allow for both translational and rotational motion.
- ✓ control Complexity:Mecanum wheels require more complex control systems compared to traditional wheels because each wheel's speed and direction can be independently controlled.
- ✓ Applications: They are commonly used in robotics, automated guided vehicles (AGVs), and other applications where precise maneuverability is essential.

5. Phototron


PHOTOTRON
DESCRIPTION:
An Autonomous Robot that can detect the shapes and patterns by using image processing .
APPLICATIONS :
1. Sorting the objects in industries
2. Detects the defected parts in the assembly line
Members :
1.N.Anil Kumar - Y18ME099
2.G.Sujitha - Y18ME047
3.K.Om Maha Lakshmi - Y18EC067
4.G.Kundan Sai Datta Prasad - Y17ME063
Duration : March-2020 – september-2021 (18 Months)

6. Smart automation Challenge _National hackathon2022- Secured consolation prize.

- ✓ Multifunctional: It is designed to handle a wide range of agricultural tasks, including planting, harvesting, weeding, spraying, and soil management.
- ✓ Sensors and Perception: The machine would rely on various sensors like cameras, LiDAR, GPS, and soil sensors to perceive its environment and make informed decisions.
- ✓ Remote Monitoring: Farmers would be able to monitor and control the machine remotely through a digital interface.

7. Conversation of waste water to electrical energy-It works under the principle of varying in weight causes lever to oscillate and that oscillation force is converted to electrical energy.Here weight variation caused by water.